

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) A method, in a data processing system, for detecting fraud, the method comprising:

receiving a set of historical data;

identifying a plurality of control points in the historical data;

building providing at least one data model based on the plurality of control points;

receiving a set of updated data;

identifying one or more new control points based on the updated data;

adjusting the at least one data model to form an adjusted data model, within the at least one data model, based on the one or more new control points, wherein the at least one data model is refined for a plurality of iterations; and

verifying a transaction based on the adjusted data model.

2. (Original) The method of claim 1, wherein the historical data includes at least one of demographic data, psychographic data, transactional data, and environmental data.

3. (Currently Amended) The method of claim 1, wherein identifying a plurality of control points includes:

identifying a plurality of outliers in a distribution of the historical data by analyzing the historical data using statistical modeling, outlier analysis, and data mining algorithms;

validating the plurality of outliers; and

categorizing the plurality of outliers as valid outliers or invalid outliers.

4. (Currently Amended) The method of claim 3, wherein the plurality of control points are valid outliers.

5. (Currently Amended) The method of claim 3, wherein the plurality of control points are invalid outliers.

6. (Currently Amended) The method of claim 1, wherein building the at least one data model includes generating a fence that passes through the plurality of control points, and wherein data points within the fence represent acceptable behavior and data points outside the fence represent unacceptable behavior.

7. (Original) The method of claim 1, wherein the updated data includes at least one of demographic data, psychographic data, transactional data, and environmental data.

8. (Currently Amended) The method of claim 1, wherein adjusting the at least one data model includes:

adding the one or more new control points to the at least one data model; and
generating a fence that passes through the plurality of control points and the one or more new control points, and wherein data points within the fence represent acceptable behavior and data points outside the fence represent unacceptable behavior.

9. (Currently Amended) The method of claim 1, wherein adjusting the at least one data model includes:

changing one or more of the plurality of control points to the one or more new control points in the at least one data model; and

generating a fence that passes through the plurality of control points, and wherein data points within the fence represent acceptable behavior and data points outside the fence represent unacceptable behavior.

10. (Currently Amended) The method of claim 1, further comprising:

determining whether a given the adjusted data model, within the at least one data model, reached reaches a steady state; [[and]]

converting the given adjusted data model to a static model [[if]] in response to a determination that the given adjusted data model reached reaches a the steady state; and

refining the at least one data model for an iteration of the plurality of iterations in response to a determination that the adjusted data model has not reached the steady state.

11. (Currently Amended) The method of claim 10, wherein determining whether a given the adjusted data model reached reaches a steady state includes:

determining a difference between [[an]] the adjusted data model and ~~an original~~ a previous data model, within the at least one data model, to form a delta value; and
determining whether the delta value is less than a threshold.

12. (Original) The method of claim 11, wherein the threshold is two standard deviations from a mean within a normal distribution of the data.

13. (Currently Amended) A computer program product, in a computer readable medium, for detecting fraud, the computer program product comprising:

instructions for receiving a set of historical data;
instructions for identifying a plurality of control points in the historical data;
instructions for building providing at least one data model based on the plurality of control points;
instructions for receiving a set of updated data;
instructions for identifying one or more new control points based on the updated data;
instructions for adjusting the at least one data model to form an adjusted data model, within the at least one data model, based on the one or more new control points, wherein the at least one data model is refined for a plurality of iterations; and
instructions for verifying a transaction based on the adjusted data model.

14. (Original) The computer program product of claim 13, wherein the historical data includes at least one of demographic data, psychographic data, transactional data, and environmental data.

15. (Currently Amended) The computer program product of claim 13, wherein the instructions for identifying a plurality of control points include:

instructions for identifying a plurality of outliers in a distribution of the historical data by analyzing the historical data using statistical modeling, outlier analysis, and data mining algorithms;
instructions for validating the plurality of outliers; and
instructions for categorizing the plurality of outliers as valid outliers or invalid outliers.

16. (Currently Amended) The computer program product of claim 15, wherein the plurality of control points are valid outliers.

17. (Currently Amended) The computer program product of claim 15, wherein the plurality of control points are invalid outliers.

18. (Currently Amended) The computer program product of claim 13, wherein building the at least one data model includes generating a fence that passes through the plurality of control points, and wherein data points within the fence represent acceptable behavior and data points outside the fence represent unacceptable behavior.

19. (Original) The computer program product of claim 13, wherein the updated data includes at least one of demographic data, psychographic data, transactional data, and environmental data.

20. (Currently Amended) The computer program product of claim 13, wherein the instructions for adjusting the at least one data model include:

instructions for adding the one or more new control points to the at least one data model; and instructions for generating a fence that passes through the plurality of control points and the one or more new control points, and wherein data points within the fence represent acceptable behavior and data points outside the fence represent unacceptable behavior.

21. (Currently Amended) The computer program product of claim 13, wherein the instructions for adjusting the at least one data model include:

instructions for changing one or more of the plurality of control points to the one or more new control points in the at least one data model; and

instructions for generating a fence that passes through the plurality of control points, and wherein data points within the fence represent acceptable behavior and data points outside the fence represent unacceptable behavior.

22. (Currently Amended) The computer program product of claim 13, further comprising:

instructions for determining whether a given the adjusted data model, within the at least one data model, reached reaches a steady state; [[and]]

instructions for converting the given adjusted data model to a static model [[if]] in response to a determination that the given adjusted data model reached reaches a the steady state; and

instructions for refining the at least one data model for an iteration of the plurality of iterations in response to a determination that the adjusted data model has not reached the steady state.

23. (Currently Amended) The computer program product of claim 22, wherein the instructions for determining whether a given the adjusted data model reached reaches a steady state include:

instructions for determining a difference between [[an]] the adjusted data model and ~~an original a previous~~ data model, within the at least one data model, to form a delta value; and
instructions for determining whether the delta value is less than a threshold.

24. (Original) The computer program product of claim 23, wherein the threshold is two standard deviations from a mean within a normal distribution of the data.

25. (Currently Amended) An apparatus for detecting fraud, the apparatus comprising:
means for receiving a set of historical data;
means for identifying a plurality of control points in the historical data;
means for building providing at least one data model based on the plurality of control points;
means for receiving a set of updated data;
means for identifying one or more new control points based on the updated data;
means for adjusting the at least one data model to form an adjusted data model, within the at least one data model, based on the one or more new control points, wherein the at least one data model is refined for a plurality of iterations; and
means for verifying a transaction based on the adjusted data model.